中文摘要

由於原油價格持續飆漲，連帶影響國內民生經濟原物料價格上漲，交通、水電、瓦斯等物價亦隨之上揚，綠色能源中之太陽能，成爲未來對抗原油價格持續飆漲的最佳方案。本論文採用具有串並聯共振式轉換器作爲太陽能蓄電池充電器電路，藉由電路推導方程式進行參數設計，實測結果驗證所提充電器電路的理論正確性，充電器其平均充電效率高達 89.6%。

英文摘要

Due to the price of crude oil is continuously increased, the price of raw material in the national economy and the people’s livelihood is rised. Traffic rate, charges for water and electricity, gas price and so on are also going up. Solar energy, one of renewable energies, is become the best plan for treating the continuous increasing price of crude oil. This thesis realizes a solar energy battery charger with series-parallel resonant converter. The circuit parameters are designed from the derived circuit equations. Experimental results have demonstrated the theoretical effectiveness of the proposed battery charger circuit. The practical mean charging efficiency of the developed battery charger is 89.6%.